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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,507	03/09/2004	Ki Hwan Park	SAM-0526	1952

7590

06/13/2006

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EXAMINER

EL ARINI, ZEINAB

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

CV

Office Action Summary	Application No. 10/796,507	Applicant(s) PARK ET AL.	
	Examiner Zeinab E. EL-Arini	Art Unit 1746	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 26-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/15/06 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 26-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26, line 9, "the second controlled rate" lacks antecedent basis.

In claim 34, line 5, after ":", --"and"---should be inserted.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elsayy et al. (6,328,809).

Elsawy et al. disclose a method of treating and drying a surface of a semiconductor substrate. The reference discloses providing a first supply of drying fluid, a second supply of drying fluid, storing a supply of decontaminating fluid in a decontaminating fluid tank, and supply the first supply of drying fluid and the supply of decontaminating fluid to process chamber to decontaminate semiconductor wafer. The reference discloses the drying fluid is nitrogen gas, the decontaminated fluid (alcohol), the treating step, rinsing, and rapidly draining the rinsing fluid from the process chamber, the DIW, and the drying step as claimed. See the claims, Figs. 2-3, 4A. The reference discloses measuring the quantity of IPA (decontaminated fluid), see col. 13, lines 12-18; the rate of flow of the drying fluid, see col. 13, lines 40-41, col. 14, lines 63-67; the rate of N₂/IPA flows into the vessel, see col. 14, lines 3-10; and the flow rate of N₂ is disclosed at col. 15, lines 12-15. The reference also discloses controlling the quantity of N₂/IPA and N₂. See col. 5, lines 38-53, col. 7, lines 7-14, and col. 9, lines 36-50. The reference discloses the simultaneously supplying the first supply of drying fluid and the combination of the second supply of drying fluid and the decontaminating fluid to the process chamber as claimed. See Figs. 2-3 and 4A.

Elsawy discloses all limitation with the exception of the step of controlling a first ratio of drying fluid to decontaminating fluid in the process chamber --- "and "independently controlling the second rate of supply-----so that the first ratio of drying fluid to decontaminating fluid in the process chamber is different than a second ratio of

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drying fluid to decontaminating fluid in the combination of the second supply of the drying fluid and the decontaminating fluid at the outlet of the fluid tank as claimed.

It would have been obvious for one skilled in the art to adjust the ratio between the drying fluid and decontaminating fluid to obtain optimum results. Re claim 35, it is well known in the art to discharge the rinsing fluid to a tank (72). See Fig. 4A, and col. 13, lines 57-60.

Response to Arguments

1. Applicant's arguments filed 5/15/06 have been fully considered but they are not persuasive. Applicant's argument with respect to Elsayy does not teach controlling the first rate of supply---“ and “independently controlling the second rate of supply---,” and the step of simultaneously supplying-----, is unpersuasive, because one skilled in the art would adjust the rate of supply to obtain optimum results. One skilled in the art would supply the decontaminating fluid and the drying fluid simultaneously to improve the cleaning or processing steps, because the decontaminated fluid would clean the surface and the drying fluid will volatilize the condensed decontaminated fluid remaining on the surface of the wafers simultaneously, which reduce the processing time and therefore increase the process efficiency. See col. 5, lines 38-43.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zeinab E. EL-Arini
Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
06/07/06